
VALIDATION OF
CAESALPINIA SUBGENUS
MEZONEURON (DESF.)
VIDAL AND NEW
COMBINATIONS IN
CAESALPINIA FOR TWO
SPECIES OF *MEZONEURON*
FROM AFRICA

While preparing a manuscript on fossil *Caesalpinia* (*Mezoneuron*) fruits from the Tertiary of North America (Herendeen & Dilcher, in press) it became apparent that new combinations in *Caesalpinia* have not been published for two *Mezoneuron* species from Africa. *Mezoneuron* Desf. was distinguished from *Caesalpinia* on the basis of its indehiscent winged fruits (Brenan, 1963; Hattink, 1974). However, *Mezoneuron* is now included in *Caesalpinia* due to similarities in floral and vegetative features (Hattink, 1974; Vidal & Hul Thol, 1976; Polhill & Vidal, 1981). New combinations in *Caesalpinia* have been published for the Asiatic species of *Mezoneuron* (Hattink, 1974; Vidal & Hul Thol, 1976). Vidal & Hul Thol (1976) regarded *Mezoneuron* as a subgenus of *Caesalpinia*; however, the subgeneric name was not validly published by these authors. This paper validates the name *C. subg. Mezoneuron* (Desf.) Vidal and establishes new combinations in *Caesalpinia* for two species of *Mezoneuron* from Africa.

Generic limits in the *Caesalpinia* complex have been difficult to define (Polhill & Vidal, 1981; G. P. Lewis, pers. comm.). Numerous genera were recognized by Britton & Rose (1930) based on carpological differences (Polhill & Vidal, 1981). Recent studies placing more emphasis on floral features have resulted in the abandonment of many of these segregate genera, including *Mezoneuron* (Gillis & Proctor, 1974; Hattink, 1974; Vidal & Hul Thol, 1976; Polhill & Vidal, 1981). Comparisons of leaflet epidermal anatomical features in *Mezoneuron* and 25 American and Asiatic *Caesalpinia* species, representing *Caesalpinia* sens. str. and six segregate genera recognized by Britton & Rose (1930), yield no significant differences between these groups (Herendeen, unpublished). These observations are consistent with those based on comparisons of floral and vegetative features. Subgeneric status for *Mezoneuron* is justified given

the differences between these groups in fruit morphology.

Although the geographic distribution of *C. subg. Mezoneuron* is restricted today to Old World tropics and subtropics, paleobotanical evidence indicates that this group occurred widely across North America during the Tertiary (Herendeen, 1990; Herendeen & Dilcher, in press). The paleobotanical data demonstrate that *C. subg. Caesalpinia* and *C. subg. Mezoneuron* were distinct taxa by the Middle Eocene (Herendeen, 1990).

***Caesalpinia* L. subg. *Mezoneuron* (Desf.) Vidal ex Herendeen & Zarucchi, comb. et stat. nov.** *Mezoneuron* Desf. Mem. Mus. Hist. Nat. 4: 245, t. 10, 11. (1818) (as *Mezoneuron*). TYPE: *M. glabrum* Desf. = *C. pubescens* (Desf.) Hattink.

NEW COMBINATIONS

Caesalpinia L.

***C. benthamiana* (Baillon) Herendeen & Zarucchi, comb. nov.** *Mezoneuron benthamianum* Baillon, *Adansonia* 6: 196 (1866). TYPE: Africa. Senegambia: *Heudelot s.n.* 1837 (holotype, P not seen).

Specimens examined. AFRICA. GUINEA: *J. G. Adams* 3382 (MO, P, BARC-fruit). LIBERIA: *J. G. Adams* 30186 (MO). NIGERIA: *R. C. Brown* 923 (MO), *J. Opayemi s.n.*, 26 Nov. 1970 (MO). GHANA: *A. A. Enti* 1637 (MO).

***C. angolensis* (Welw. ex Oliver) Herendeen & Zarucchi, comb. nov.** *Mezoneuron angolense* Welw. ex Oliver, *Fl. Trop. Afr.* 2: 261 (1871). TYPE: Africa. Angola: *Welwitsch* 606 (lectotype, LISU not seen; islectotype, BM not seen).

Specimens examined. AFRICA. LIBERIA: *P. M. Danial* 112 (MO). TANZANIA & KENYA: *O. Flock* 552 (MO).

TANZANIA: *Harris et al.* DSM 2621 (MO). UGANDA: *P. K. Rwaburindore* 896 (MO), *P. K. Rwaburindore* 1018 (MO). ANGOLA: *Welwitsch* 607 (syntype, LISU not seen; isosyntypes, BM, K not seen).

Three species of *Mezoneuron* were recognized by Oliver (1871) from tropical Africa. In addition to the two species discussed above, *M. welwitschianum* Oliver was also described. This latter species was transferred to *Caesalpinia* by Brenan (1963) because the fruit is thickened along the placental suture, not winged as in other *Mezoneuron* species. Fruit morphology suggests that this species is not related to *C.* subg. *Mezoneuron*. Based on similarities in vegetative and reproductive morphology, Brenan (1963) suggested a relationship between *C. welwitschiana* and the Asiatic *C. tortuosa* Roxb.

Mezoneuron benthamianum and *M. angolense* were distinguished by Oliver (1871) on the basis of leaf size, and pinna and leaflet numbers:

Pinnae 5–6 pairs, leaflets 10–12 to each
..... *M. benthamianum*
Pinnae 8–10 pairs, leaflets 12–18 to each
..... *M. angolense*

Based on the specimens studied, it appears that these differences remain valid. In addition, differences between these species in details of leaflet epidermal anatomy further suggest that these are distinct species. Trichomes are more frequent on the abaxial epidermis of *C. benthamiana* than on *C. angolensis*, and cutinization of anticlinal walls of epidermal cells is less evident in *C. angolensis* than in *C. benthamiana*.

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